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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,073	06/28/2001	Julie Ann Watts	SVL9-2001-0002US1/2021P	6518

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SAWYER LAW GROUP  
P.O. Box 51418  
Palo Alto, CA 94303

EXAMINER

GODDARD, BRIAN D

ART UNIT

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3

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 09/894,073	Applicant(s) WATTS, JULIE ANN	
	Examiner Brian Goddard	Art Unit 2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2001.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other:  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by the article entitled, "An Advanced Commit Protocol for MLS Distributed Database Systems" by Indrajit et al.

Referring to claim 1, Indrajit discloses a method for selectively releasing locks on data as claimed. See Figures 1-5 and the corresponding sections (1-5) of the article for the details of this disclosure. In particular, Indrajit teaches "a method for selectively releasing locks on data, comprising the steps of:

- (a) providing at least one savepoint [established by SaveWork() system call (See Figs. 1-5 & Section 4.1 in particular)] in a transaction [subtransaction or local transaction (See Fig. 2)], wherein at least one lock [low level lock(s) for  $op_i$ ] is assigned to the at least one savepoint [See sections 4.1 – 4.2 (left column of pg. 123 in particular) & Algorithm 1 (in section 5)] and at least one lock [subtransaction locks other than low-read] is assigned to the transaction [See paragraph immediately preceding section 6];
- (b) rolling back [RollBack(s) {See Fig. 2}] the transaction to the at least one savepoint [identified by handle  $s$ ]; and

(c) releasing the at least one lock assigned to the at least one savepoint [See section 4.1 and the paragraph immediately preceding section 6], wherein the at least one lock assigned to the transaction is maintained [until commit (See the paragraph immediately preceding section 6)]” as claimed.

Referring to claim 2, Indrajit discloses the method for selectively releasing locks on data as claimed. See Figures 2 & 3 and the corresponding portions of the article for this disclosure. In particular, Indrajit teaches the method of claim 1, as above, “wherein the providing step (a) comprises: (a1) providing a sequence of savepoints [e.g.  $sl_p$ ,  $sl_q$ ,  $sl_s$  (in Fig. 3)] in the transaction, wherein at least one lock [low-level lock(s) for  $op_i$  (See above)] is assigned to each of the savepoints and the at least one lock is assigned to the transaction [See above]” as claimed.

Referring to claim 3, Indrajit discloses the method for selectively releasing locks on data as claimed. See Figures 2 & 3 and the corresponding portions of the article for this disclosure. In particular, Indrajit teaches the method of claim 1, as above, “wherein the rolling step (b) comprises: (b1) rolling back the transaction [See the 3<sup>rd</sup> paragraph of section 4.1 as well as the paragraph immediately preceding section 6] to one of a sequence of savepoints [e.g.  $sl_p$ ,  $sl_q$ ,  $sl_s$  (in Fig. 3)]” as claimed.

Referring to claim 4, Indrajit discloses the method for selectively releasing locks on data as claimed. See Algorithm 1 & Figures 3-5 and the corresponding portions of the article for this disclosure. In particular, Indrajit teaches the method of claim 1, as above, “wherein the releasing step (c) comprises:

(c1) releasing at least one lock [See discussions regarding claims 1 & 2 above] assigned to one of a sequence of savepoints to which the transaction is rolled back [‘roll back to a savepoint s’ (pg. 125, paragraph preceding section 6)]; and

(c2) releasing at least one lock assigned to subsequent savepoints [‘releases the locks acquired after the savepoint s’ (pg. 125, paragraph preceding section 6)], wherein the at least one lock assigned to the transaction [See discussions regarding claims 1 & 2 above] and at least one lock assigned to preceding savepoints [‘holds on to locks acquired before s’ (pg. 125, paragraph preceding section 6)] are maintained” as claimed.

Referring to claim 5, Indrajit discloses the method for selectively releasing locks on data as claimed. See Figures 2 & 4-5 and the corresponding portions of the article for this disclosure. In particular, Indrajit teaches the method of claim 4, as above, further comprising: “(c3) releasing another [sl<sub>3</sub>] of the sequence of savepoints [sl<sub>1</sub>, sl<sub>2</sub>, sl<sub>3</sub>]” (upon rollback to sl<sub>2</sub>) as claimed. In other words, in the examples of Figs. 4 & 5, a rollback to sl<sub>2</sub> [RollBack(sl<sub>2</sub>)] releases sl<sub>3</sub>, another of the sequence of savepoints.

Referring to claim 6, Indrajit discloses the method for selectively releasing locks on data as claimed. Again, see Figures 2 & 4-5 and the corresponding portions of the article for this disclosure. In particular, Indrajit teaches the method of claim 5, as above, further comprising: “(c4) reassigning [second half of RollBack – after undo operations (See Fig. 2)] at least one lock [low-level lock(s) for op<sub>i</sub>] assigned to the another of the sequence of savepoints [sl<sub>3</sub>] to a preceding savepoint [sl<sub>2</sub>]” as claimed. In other words,

in the examples of Figs. 4 & 5, the locks assigned to transaction steps following  $sl_3$  are reassigned to  $sl_2$  during the second half of the rollback to  $sl_2$ .

Referring to claim 7, Indrajit discloses the method for selectively releasing locks on data as claimed. See Figures 2 & 4-5 and the corresponding portions of the article for this disclosure. In particular, Indrajit teaches the method of claim 5, as above, further comprising: "(c4) maintaining knowledge [local transaction log (See section 4.1)] of the released another of the sequence of savepoints [ $sl_3$ ], such that if the transaction is rolled back [RollBack( $sl_2$ )] to a preceding savepoint [ $sl_2$ ], the at least one lock assigned to the released another of the sequence of savepoints [low-level lock(s) for transaction steps following  $sl_3$ ] is released [See the paragraph preceding section 6]" as claimed.

Claim 8 is rejected on the same basis as claims 1-4 above. See the discussions regarding claims 1-4 for the details of this disclosure.

Claims 9-15 are rejected on the same basis as claims 1-7 respectively. See the discussions regarding claims 1-7 above for the details of this disclosure. In particular, Indrajit's method described with regard to claims 1-7 above is implemented on a computer readable medium as claimed. See the Abstract, Introduction, and Section 2 for this disclosure.

Claim 16 is rejected on the same basis as claim 8, in light of the basis for claims 9-15 above. See the discussions regarding claim 8 above for the details of this disclosure.

Claim 17 is rejected on the same basis as claim 1. See the discussion regarding claim 1 above for the details of this disclosure. In particular, Indrajit's method described with regard to claim 1 above is implemented on a system [distributed database system] as claimed.

Claim 18 is rejected on the same basis as claim 17. In particular, Indrajit teaches "a system, comprising:

a data manager [transaction manager TM<sub>s</sub>] for performing tasks [subtransactions] on data, wherein the tasks comprise:

providing at least one savepoint in a transaction [claim 1, step (a)],

assigning at least one lock to the at least one savepoint [claim 1, step (a)],

assigning at least one lock to the transaction [claim 1, step (a)],

responding to a recovery manager request for a rollback [claim 1, step (b)]

to the at least one savepoint by undoing [See the 3<sup>rd</sup> paragraph of section 4.1]

operations performed since the at least one savepoint according to a log [local

transaction log (See section 4.1)], and

requesting to a lock manager [See section 4.2] for release of the at least one lock assigned to the at least one savepoint [claim 1, step (c)];

the lock manager [See section 4.2] for creating and maintaining the at least one lock assigned to the at least one savepoint and the at least one lock assigned to the transaction, and for releasing the at least one lock assigned to the at least one savepoint when the transaction is rolled back to the at least one savepoint [claim 1, step (c) and claim 4];

a log manager [See section 4.1] for storing information on the tasks in the log [local transaction log], wherein the log comprises information concerning data and schema modifications, and the at least one savepoint [See Fig. 2]; and

the recovery manager [Coordinator C], wherein the recovery manager processes the request for the rollback to the at least one savepoint by advising the data manager of the request [See Algorithm 1]" as claimed.

### ***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,233,585 to Gupta et al. and 5,966,706 to Biliris et al. are each considered particularly pertinent to applicant's claimed invention.

The remaining prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

bdg  
July 11, 2003



WAYNE AMSBURY  
PRIMARY PATENT EXAMINER